FINAL REPORT

Limited Scope Indoor Air Quality Survey
SSMC III

for

National Oceanic & Atmospheric Administration

June 7th, 10th and 11th, 2002

Interagency Agreement #: D8H02CO31200
Task: 9903

November 19, 2002

Prepared by
US Public Health Service
Division of Federal Occupational Health
Bethesda Central Office

Executive Summary

At the request of the National Oceanic & Atmospheric Administration (NOAA), Federal Occupational Health (FOH) collected indoor air quality measurements for temperature, relative humidity, carbon dioxide, carbon monoxide, and airborne fungal spores throughout Building SSMC-3, located at 1315 East-West Highway, Silver Spring, Maryland. Measurements were taken on February 21, 2001 following the methodology described below.

Temperatures throughout the building over the time period measured ranged from 71-81^{0}F. Indoor relative humidity ranged from 34-44%.

Current guidelines of the American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE) Standard 55-1995 (Thermal Environmental Conditions for Human Occupancy) recommend temperatures in the range of 68-75^{0}F in winter season and 73-79^{0}F summer season, along with maintaining 30 - 60% relative humidity. These ranges are based on a 10% dissatisfaction criterion.

Carbon dioxide measurements provide an indicator of available “fresh air” in the space. Current standards describe indoor carbon dioxide levels below 850 ppm (AIHA), or no greater than a 700 ppm differential between outside and inside air concentrations (ASHRAE 62-1999) as generally acceptable. Carbon dioxide measurements throughout the building ranged from 524-874 ppm. Carbon dioxide measured outdoors was 627-1086 ppm.

Carbon monoxide measurements recorded ranged from 0-2 ppm. The permissible exposure limit for CO is 50 ppm. The "Industrial Hygienist's Guide to Indoor Air Quality Investigations" published by the American Industrial Hygiene Association, Technical Committee on Indoor Environmental Quality cites < 9 ppm average as acceptable. There were no combustion sources in the building to cause elevated CO, and outdoor measurements were 0 ppm.

With regard to microbial sampling, indoor fungal levels were generally lower than those of outdoors and fungi detected indoors were similar to those detected outdoors.

Introduction

At the request of the National Oceanic & Atmospheric Administration (NOAA), Federal Occupational Health (FOH) performed a limited scope indoor air quality investigation of Building SSMC-3, located at 1315 East-West Highway, Silver Spring, Maryland. The investigation took place on June 4th through 6th, 2002. Evaluation methodologies and results are presented in the following report.

Evaluation Methods

Measurements of temperature, relative humidity, carbon monoxide, and carbon dioxide were taken in eight locations on each floor of the building as indicators of relative indoor air quality using a TSI Q Trak IAQ monitor, model 8550/8551. Each floor was designated into two zones on either side of the elevator lobby. Four measurements were taken in each zone in randomly selected locations on the interior and exterior of the floor.

Air samples for fungal contamination were collected by a culturable method using Andersen N-6 samplers at a flow rate of 28.3 L/min. Indoor Andersen air samples were collected for 3 minutes and outdoor samples were collected for both one and three minutes. Two percent (2 %) malt extract agar (MEA) was used to recover general fungi. All plates were incubated in a 25˚C incubator and were examined every other day for up to 10 days to ensure the full recovery of fungi. Fungal identification was based on colony morphology, spores and conidia formation. Total fungal colonies formed on each plate were counted and recorded. Fungal levels in samples were presented as colony forming units (CFUs) per measuring unit.

Standards/Criteria

The IAQ Assessment followed general guidelines specified by the Environmental Protection Agency "Building Air Quality" Guide for Building Owners and Facility Managers, and the "Industrial Hygienist's Guide to Indoor Air Quality Investigations" published by the American Industrial Hygiene Association, Technical Committee on Indoor Environmental Quality.

ASHRAE Standard 55-1995 (Thermal Environmental Conditions for Human Occupancy) recommends temperatures in the range of 68-75^{0}F in winter season and 73-79^{0}F Summer season. These ranges are based on a 10% dissatisfaction criterion. The recommended relative humidity range is 30 - 60%.

Carbon monoxide levels should be 0-2 parts per million (ppm) above ambient, < 9 ppm average. Carbon Dioxide levels should remain < 850 ppm ("Industrial Hygienist's Guide to Indoor Air Quality Investigations" published by the American Industrial Hygiene Association, Technical Committee on Indoor Environmental Quality). ASHRAE 62-1999 recommends indoor carbon dioxide levels no greater than 700 ppm higher than outdoor levels (outdoor levels generally range from 300-500 ppm).

There are no “standards” for building microbial burden. Complaint areas are generally compared with non-complaint areas and outside air.

Results and Conclusions

Temperature, relative humidity, carbon dioxide, and carbon monoxide measurements by location are tabulated in Attachment A.

Microbial results are tabulated in Attachment A and B.

Temperatures throughout the building over the time period measured ranged from 71-81^{0}F. Indoor relative humidity ranged from 34-44%.

Carbon dioxide measurements provide an indicator of available “fresh air” in the space. Current standards describe indoor carbon dioxide levels below 850 ppm (AIHA), or no greater than a 700 ppm differential between outside and inside air concentrations (ASHRAE 62-1999) as generally acceptable. Carbon dioxide measurements throughout the building ranged from 375-407 ppm. Carbon dioxide measured outdoors was 627-1086 ppm.

Carbon monoxide measurements recorded ranged from 0-2 ppm. The permissible exposure limit for CO is 50 ppm. The "Industrial Hygienist's Guide to Indoor Air Quality Investigations" published by the American Industrial Hygiene Association, Technical Committee on Indoor Environmental Quality cites < 9 ppm average as acceptable. There were no combustion sources in the building to cause elevated CO, and outdoor measurements were 0 ppm.

With regard to microbial sampling, indoor fungal levels were generally lower than those of outdoors and fungi detected indoors were similar to those detected outdoors.

Recommendations

Based upon this limited scope investigation, DFOH

1. maintains the position that the HVAC system should be routinely maintained and checked to ensure all components are properly operating, and that fresh air is adequately distributed to occupied spaces;
2. recommends routine visual inspections of the building to detect any water intrusion from outdoors or water leaks originating from indoor plumbing .

U.S. Public Health Service, Division of Federal Occupational Health

Indoor Air Quality Survey Report---Q Trak Data Log for the National Oceanic and Atmospheric Administration, Silver Spring, MD

Survey Methodology:

This table sample data collected during the National Oceanic & Atmospheric administration (NOAA) Limited Scope Indoor Air Qua;ity survey for SSMC II, III, and IV. The survey was conducted in accordance with NOAA project specifications. Eight sample locations were identified on each floor of Building 2, Building 3, and Building 4. Carbon dioxide, carbon

monoxide, relative humidity, and temperature readings were collected at each location twice a day using a TSI Q Trak IAQ monitor. In addition to the IAQ readings, four of the eight sample locations were selected for airborne fungal sample ollection by a culturable method using an Anderson N-6 sampler. Daily outside building air samples were collected for comparison.

Data Collected By: Gary McNaughton **Building: 3** **Floor: 2** **Date Samples: 06/11/02**

PERIOD I										PERIOD II								
Sample Site	Outside Building	Lounge Area	Rm 2501	Rm 2406	Men's Room #1	Rm 2129	Women's Room #2	Rm 2688	Staff Library	Outside Building	Lounge Area	Rm 2501	Rm 2406	Men's Room #1	Rm 2129	Women's Room #2	Rm 2688	Staff Library
Time	8:00am	8:20am	8:36am	8:53am	9:08am	9:16am	9:32am	10:55am	11:10am	3:01pm	3:18pm	3:38pm	3:55pm	4:10pm	4:26pm	4:41pm	4:59pm	5:15pm
Temperature	84	75	74	75	75	74	74	74	74	82	75	74	75	75	74	74	74	74
Relative Humidity	54	40	40	40	40	41	40	40	40	53	40	40	40	40	41	40	40	40
Carbon Dioxide	392	550	548	553	554	548	572	524	529	395	575	573	582	591	602	621	615	623
Carbon Monoxide	0	0	1	1	1	1	1	0	0	0	0	1	0	0	1	1	0	0
Air Sample #	A	1	2	n/a	n/a	n/a	n/a	n/a	n/a	C	n/a	n/a	3	4	n/a	n/a	n/a	n/a
Results in CFU/m^3	1873	12	<12	n/a	n/a	n/a	n/a	n/a	n/a	2120	n/a	n/a	<12	<12	n/a	n/a	n/a	n/a

Notes

Data Collected By: Gary McNaughton **Building: 3** **Floor: 3** **Date Samples: 06/11/02**

PERIOD I										PERIOD II								
Sample Site	Outside Building	Rm 3702	Rm 3641	Elevator Lobby	Rm 3224	Rm 3406	Rm 3350	Rm 3734	Rm 3239	Outside Building	Rm 3702	Rm 3641	Elevator Lobby	Rm 3224	Rm 3406	Rm 3350	Rm 3734	Rm 3239
Time	10:00am	10:16am	10:32am	10:51am	11:07am	11:26am	11:44am	11:59am	12:15pm	2:00pm	2:17pm	2:32pm	2:51pm	3:07pm	3:26pm	3:41pm	3:58pm	4:14pm
Temperature	84	81	77	76	75	74	76	76	77	82	78	75	76	75	74	76	76	77
Relative Humidity	54	34	37	37	35	37	37	35	37	53	38	38	38	35	37	37	35	37
Carbon Dioxide	492	712	617	621	619	615	618	620	614	395	815	720	653	675	681	620	635	615
Carbon Monoxide	0	2	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1
Air Sample #	A	1	2	n/a	n/a	n/a	n/a	n/a	n/a	C	n/a	n/a	n/a	3	4	n/a	n/a	n/a
Results in CFU/m^3	1873	<12	<12	n/a	n/a	n/a	n/a	n/a	n/a	2120	n/a	n/a	n/a	<12	<12	n/a	n/a	n/a

Notes

Data Collected By: Gary McNaughton **Building: 3** **Floor: 4** **Date Samples: 06/10/02**

PERIOD I										PERIOD II								
Sample Site	Outside Building	Rm 4406	Rm 4402	Lobby	Rm 4867	Rm 4637	Men's Room #1	Rm 4131	Rm 4253	Outside Building	Rm 4406	Rm 4402	Lobby	Rm 4867	Rm 4637	Men's Room #1	Rm 4131	Rm 4253
Time	8:00am	1:16pm	1:35pm	1:56pm	2:13pm	2:31pm	2:47pm	3:04pm	3:19pm	2:00pm	5:47pm	6:05pm	6:21pm	6:38pm	6:58pm	7:15pm	7:30pm	7:45
Temperature	76	74	74	74	74	74	74	74	74	82	74	74	74	74	74	74	74	74
Relative Humidity	51	43	42	41	43	42	42	43	43	47	43	42	41	43	42	42	43	43
Carbon Dioxide	375	680	682	685	685	675	685	683	682	395	713	720	750	705	710	728	689	692
Carbon Monoxide	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
Air Sample #	B	1	n/a	n/a	n/a	n/a	n/a	2	n/a	D	n/a	n/a	n/a	3	4	n/a	n/a	n/a
Results in CFU/m^3	954	24	n/a	n/a	n/a	n/a	n/a	12	n/a	none	n/a	n/a	n/a	<12	<12	n/a	n/a	n/a

Notes

Data Collected By: Gary McNaughton **Building: 3** **Floor: 5** **Date Samples: 06/10/02**

PERIOD I										PERIOD II								
Sample Site	Outside Building	Rm 5817	Lobby	Rm 5237	Rm 5311	Rm 5751	Rm 5651	Rm 5601	Rm 5853	Outside Building	Rm 5817	Lobby	Rm 5237	Rm 5311	Rm 5751	Rm 5651	Rm 5601	Rm 5853
Time	8:00am	8:16am	8:33am	8:49am	9:05am	9:21am	9:41am	10:58am	11:14am	2:00pm	2:17pm	2:36pm	2:57pm	3:14pm	3:30pm	3:45pm	4:02pm	4:17pm
Temperature	76	75	75	74	74	75	74	74	74	82	75	75	74	74	75	74	74	74
Relative Humidity	51	42	41	41	41	41	41	41	40	47	42	41	41	41	41	41	41	40
Carbon Dioxide	375	595	581	595	583	592	591	580	582	395	598	587	601	602	615	610	603	617
Carbon Monoxide	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
Air Sample #	B	1	n/a	2	n/a	n/a	n/a	n/a	n/a	D	n/a	n/a	n/a	3	4	n/a	n/a	n/a
Results in CFU/m^3	954	<12	n/a	<12	n/a	n/a	n/a	n/a	n/a	none	n/a	n/a	n/a	<12	12	n/a	n/a	n/a

Notes

Data Collected By: Gary McNaughton **Building: 3** **Floor: 6** **Date Samples: 06/10/02**

PERIOD I										PERIOD II								
Sample Site	Outside Building	Rm 6419	Rm 6848	Rm 6871	Rm 6522	Elevator Lobby	Women's Room	Rm 6231	Rm 6140	Outside Building	Rm 6419	Rm 6848	Rm 6871	Rm 6522	Elevator Lobby	Women's Room	Rm 6231	Rm 6140
Time	8:00am	9:17am	9:37am	9:53am	10:19am	10:34am	10:50am	11:06am	11:21am	2:00pm	3:20pm	3:36pm	3:55pm	4:11pm	4:31pm	4:47pm	5:05pm	5:20pm
Temperature	76	75	74	74	74	74	75	74	75	82	75	74	74	74	74	75	74	75
Relative Humidity	51	39	39	40	40	40	40	41	41	47	40	40	41	41	41	41	41	41
Carbon Dioxide	375	706	695	702	708	698	715	702	721	395	736	740	710	723	706	720	706	723
Carbon Monoxide	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
Air Sample #	B	1	n/a	n/a	2	n/a	n/a	n/a	n/a	D	n/a	3	4	n/a	n/a	n/a	n/a	n/a
Results in CFU/m^3	954	24	n/a	n/a	12	n/a	n/a	n/a	n/a	none	n/a	12	<12	n/a	n/a	n/a	n/a	n/a

Notes

Data Collected By: Gary McNaughton **Building: 3** **Floor: 7** **Date Samples: 06/10/02**

PERIOD I										PERIOD II								
Sample Site	Outside Building	Rm 7833	Women's Room #2	Rm 7867	Rm 7500	Rm 7240	Rm7609	Rm 7876	Lobby	Outside Building	Rm 7833	Women's Room #2	Rm 7867	Rm 7500	Rm 7240	Rm7609	Rm 7876	Lobby
Time	8:00am	9:18am	9:27am	9:45am	10:02am	10:18am	10:38am	11:00am	11:17am	2:00pm	6:17pm	6:35pm	6:51pm	7:07pm	7:26pm	7:45pm	8:00pm	8:16pm
Temperature	76	74	74	74	74	74	74	74	74	82	74	74	74	74	74	74	74	74
Relative Humidity	51	40	40	40	40	40	40	40	40	47	40	40	40	40	40	40	40	40
Carbon Dioxide	375	788	785	785	787	784	780	788	789	395	774	874	874	774	876	853	876	835
Carbon Monoxide	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
Air Sample #	B	1	2	n/a	n/a	n/a	n/a	n/a	n/a	D	n/a	n/a	n/a	4	3	n/a	n/a	n/a
Results in CFU/m^3	954	12	<12	n/a	n/a	n/a	n/a	n/a	n/a	none	n/a	n/a	n/a	<12	<12	n/a	n/a	n/a

Notes

Data Collected By: Gary McNaughton **Building: 3** **Floor: 8** **Date Samples: 06/10/02**

PERIOD I										PERIOD II								
Sample Site	Outside Building	Rm 8514	Women's Room #1	Rm 8753	Rm 8871	Men's Room #1	Rm 8441	Rm 8140	Rm 8253	Outside Building	Rm 8514	Women's Room #1	Rm 8753	Rm 8871	Men's Room #1	Rm 8441	Rm 8140	Rm 8253
Time	8:00am	9:17am	9:37am	9:53am	10:05am	10:20am	10:37am	10:58am	11:14am	2:00pm	4:31pm	4:51pm	5:07pm	5:25pm	5:41pm	5:59pm	6:16pm	6:32pm
Temperature	76	78	76	75	76	76	76	76	75	82	78	76	75	76	76	76	75	76
Relative Humidity	51	40	41	40	40	41	40	41	41	47	40	41	40	40	41	40	41	41
Carbon Dioxide	375	805	750	753	763	750	755	760	785	395	892	857	815	827	763	783	803	829
Carbon Monoxide	0	1	1	1	1	1	1	1	1	0	0	0	1	1	1	0	1	1
Air Sample #	B	1	2	n/a	n/a	n/a	n/a	n/a	n/a	D	n/a	n/a	3	n/a	n/a	n/a	4	n/a
Results in CFU/m^3	954	12	12	n/a	n/a	n/a	n/a	n/a	n/a	none	n/a	n/a	<12	n/a	n/a	n/a	<12	n/a

Notes

Data Collected By: Gary McNaughton **Building: 3** **Floor: 9** **Date Samples: 06/07/02**

PERIOD I										PERIOD II								
Sample Site	Outside Building	Rm 9833	Rm 9129	Rm 9867	Elevator Lobby	Rm 9240	Rm 9751	Rm 9744	Rm 9227	Outside Building	Rm 9833	Rm 9129	Rm 9867	Elevator Lobby	Rm 9240	Rm 9751	Rm 9744	Rm 9227
Time	9:02am	9:18am	9:34am	9:52am	10:07am	10:30am	10:45am	11:02am	11:17am	3:03pm	3:19pm	3:34pm	3:53pm	4:07pm	4:26pm	4:44pm	5:00pm	5:16pm
Temperature	78	73	73	73	73	72	73	72	73	79	73	73	73	73	72	73	72	73
Relative Humidity	38	41	41	40	42	41	40	41	40	40	40	40	43	42	40	41	41	40
Carbon Dioxide	387	718	720	725	728	750	732	725	727	385	738	873	873	873	772	773	795	821
Carbon Monoxide	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Air Sample #	B	1	n/a	n/a	n/a	n/a	2	n/a	n/a	D	n/a	n/a	n/a	n/a	n/a	n/a	3	4
Results in CFU/m^3	954	59	n/a	n/a	n/a	n/a	35	n/a	n/a	989	n/a	n/a	n/a	n/a	n/a	n/a	12	12

Notes

Data Collected By: Gary McNaughton **Building: 3** **Floor: 10** **Date Samples: 06/07/02**

PERIOD I										PERIOD II								
Sample Site	Outside Building	Rm 10500	Rm 10240	Rm 10817	Elevator Lobby	Rm 10751	Rm 10320	Rm 10315	Rm 10146	Outside Building	Rm 10500	Rm 10240	Rm 10817	Elevator Lobby	Rm 10751	Rm 10320	Rm 10315	Rm 10146
Time	9:02am	10:16am	10:33am	10:53am	11:05am	11:20am	11:36am	11:55am	12:11pm	3:03pm	3:32pm	3:51pm	4:08pm	4:28pm	4:46pm	5:02pm	5:18pm	5:35pm
Temperature	78	74	73	73	72	73	72	72	72	79	74	74	74	73	73	72	73	72
Relative Humidity	38	41	41	40	41	40	41	41	42	40	41	41	40	41	40	41	41	42
Carbon Dioxide	387	740	742	745	749	739	674	688	690	385	748	805	815	873	815	735	720	720
Carbon Monoxide	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Air Sample #	B	1	2	n/a	n/a	n/a	n/a	n/a	n/a	D	n/a	n/a	3	n/a	n/a	n/a	n/a	4
Results in CFU/m^3	954	35	12	n/a	n/a	n/a	n/a	n/a	n/a	989	n/a	n/a	24	n/a	n/a	n/a	n/a	24

Notes

Data Collected By: Gary McNaughton **Building: 3** **Floor: 11** **Date Samples: 06/07/02**

PERIOD I										PERIOD II								
Sample Site	Outside Building	Rm 11817	Rm 11867	Rm 11717	Rm 11500	Men's Room #2	Women's Room #2	Rm 11114	Elevator Lobby	Outside Building	Rm 11817	Rm 11867	Rm 11717	Rm 11500	Men's Room #2	Women's Room #2	Rm 11114	Elevator Lobby
Time	9:02am	10:16am	10:35am	10:54am	11:10am	11:26am	11:44am	11:59am	12:15pm	3:03pm	4:47pm	5:07pm	5:22pm	5:40pm	6:00pm	6:18pm	6:35pm	6:50pm
Temperature	78	74	73	73	73	74	72	72	72	79	74	73	73	73	73	74	73	73

Relative Humidity	38	42	42	41	42	41	41	42	41	40	40	41	41	40	40	42	43	40
Carbon Dioxide	387	700	715	706	725	695	735	715	709	385	735	810	819	873	790	823	815	829
Carbon Monoxide	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Air Sample #	B	1	n/a	n/a	2	n/a	n/a	n/a	n/a	D	n/a	n/a	n/a	n/a	3	4	n/a	n/a
Results in CFU/m^3	954	12	n/a	n/a	12	n/a	n/a	n/a	n/a	989	n/a	n/a	n/a	n/a	24	12	n/a	n/a

Notes

Data Collected By: Gary McNaughton **Building: 3** **Floor: 12** **Date Samples: 06/07/02**

PERIOD I										**PERIOD II**								
Sample Site	Outside Building	Rm 12111	Elevator Lobby	Rm 12858	Rm 12639	Rm 12540	Rm 12240	Rm 12245	Rm 12339	Outside Building	Rm 12111	Elevator Lobby	Rm 12858	Rm 12639	Rm 12540	Rm 12240	Rm 12245	Rm 12339
Time	9:02am	12:16pm	12:32pm	12:51pm	1:07pm	1:26pm	1:42pm	1:57pm	2:13pm	3:03pm	5:46pm	6:02pm	6:18pm	6:36pm	6:55pm	7:10pm	7:27pm	7:45pm
Temperature	78	71	71	73	73	75	73	73	73.2	79	71	72	72	71	75	74	73	73
Relative Humidity	38	43	42	42	42	42	42	40	41	40	42	42	42	42	42	42	40	41
Carbon Dioxide	387	698	630	696	636	625	640	647	700	385	729	753	783	710	679	693	703	725
Carbon Monoxide	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Air Sample #	B	1	n/a	2	n/a	n/a	n/a	n/a	n/a	D	n/a	n/a	n/a	3	n/a	4	n/a	n/a
Results in CFU/m^3	954	24	n/a	12	n/a	n/a	n/a	n/a	n/a	989	n/a	n/a	n/a	12	n/a	12	n/a	n/a

Notes

Data Collected By: Gary McNaughton **Building: 3** **Floor: 13** **Date Samples: 06/07/02**

PERIOD I										**PERIOD II**								
Sample Site	Outside Building	Rm 13817	Rm 13705	Rm 13620	Rm 13626	Rm 13500	Rm 13341	Rm 13229	Men's Room	Outside Building	Rm 13817	Rm 13705	Rm 13620	Rm 13626	Rm 13500	Rm 13341	Rm 13229	Men's Room
Time	9:02am	11:16am	11:32am	11:50am	12:05pm	12:22pm	12:37pm	12:55pm	1:10pm	3:03pm	3:16pm	3:32pm	3:48pm	4:04pm	4:22pm	4:40pm	4:58pm	5:14pm
Temperature	78	71	72	72	73	73	74	73	72	79	72	71	72	72	73	73	73	72
Relative Humidity	38	45	42	42	42	41	42	42	43	40	42	42	42	42	42	42	41	42
Carbon Dioxide	387	807	705	785	712	721	775	752	761	385	812	715	788	721	743	810	815	793
Carbon Monoxide	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Air Sample #	B	1	2	n/a	n/a	n/a	n/a	n/a	n/a	D	n/a	n/a	n/a	3	n/a	n/a	n/a	4
Results in CFU/m^3	954	59	35	n/a	n/a	n/a	n/a	n/a	n/a	989	n/a	n/a	n/a	12	n/a	n/a	n/a	24

Notes

Data Collected By: Gary McNaughton **Building: 3** **Floor: 14** **Date Samples: 06/07/02**

PERIOD I										**PERIOD II**								
Sample Site	Outside Building	Rm 14836	Rm 14527	Rm 14434	Rm 14239	Rm 14235	Rm 14867	Rm 14743	Rm 14635	Outside Building	Rm 14836	Rm 14527	Rm 14434	Rm 14239	Rm 14235	Rm 14867	Rm 14743	Rm 14635
Time	9:02am	12:16pm	12:33pm	12:51pm	1:04pm	1:22pm	1:41pm	1:50pm	2:15pm	3:03pm	5:46pm	6:01pm	6:17pm	6:36pm	6:51pm	7:07pm	7:25pm	7:40pm
Temperature	78	72	73	74	73	71	72	73	73	79	73	71	72	73	72	72	73	73
Relative Humidity	38	42	43	41	40	40	45	44	44	40	42	43	42	41	41	45	44	44
Carbon Dioxide	387	675	684	750	673	668	650	640	632	385	723	715	861	864	793	739	759	745
Carbon Monoxide	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	1
Air Sample #	B	1	2	n/a	n/a	n/a	n/a	n/a	n/a	D	n/a	n/a	n/a	3	n/a	n/a	4	n/a
Results in CFU/m^3	954	47	94	n/a	n/a	n/a	n/a	n/a	n/a	989	n/a	n/a	n/a	47	n/a	n/a	71	n/a

Notes

Data Collected By: Gary McNaughton **Building: 3** **Floor: 15** **Date Samples: 06/07/02**

PERIOD I										**PERIOD II**								
Sample Site	Outside Building	Rm 15833	Rm 15408	Rm 15420	Rm 15347	Rm 15248	Rm 15871	Rm 15861	Rm 15712	Outside Building	Rm 15833	Rm 15408	Rm 15420	Rm 15347	Rm 15248	Rm 15871	Rm 15861	Rm 15712
Time	9:02am	11:15am	11:31am	11:47am	12:04pm	12:22pm	12:38pm	12:58pm	1:14am	3:03pm	4:18pm	4:36pm	4:52pm	5:08pm	5:26pm	5:44pm	6:01pm	6:23pm
Temperature	78	72	72	72	73	73	72	73	73	79	72	72	72	73	73	72	73	73
Relative Humidity	38	42	41	41	41	40	40	40	40	40	42	41	41	41	40	40	40	40
Carbon Dioxide	387	620	582	565	580	602	603	605	625	385	783	691	653	702	721	753	791	703
Carbon Monoxide	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Air Sample #	B	1	2	n/a	n/a	n/a	n/a	n/a	n/a	D	n/a	n/a	n/a	3	n/a	n/a	4	n/a
Results in CFU/m^3	954	82	130	n/a	n/a	n/a	n/a	n/a	n/a	989	n/a	n/a	n/a	188	n/a	n/a	141	n/a

Notes